



1000 Essington Road, Suite 114
Joliet, Illinois, 60435
hvega@jsforensics.com
815-421-7801

Curriculum Vitae

Henry V. Vega, PE, ACTAR

Forensic Engineer & Accident Reconstructionist

OVERVIEW

Mr. Vega is a licensed Professional Mechanical Engineer, an ACTAR accredited accident reconstructionist, and a certified FAA UAV Pilot who has been working in failure analysis and accident reconstruction since 1998. Mr. Vega holds a Bachelor of Science in Mechanical Engineering from Northern Illinois University.

He has extensive experience investigating accidents involving commercial and passenger vehicles, motorcycles, farm equipment, and ATV's. He is certified in downloading and analyzing CDR ("black box") data used in vehicle accident reconstruction analysis. He has used photogrammetric methods, digital mapping, audio/video analysis, and three-dimensional computer simulations to support opinions in accident reconstruction. He developed a method of combining sUAV (drone) or terrestrial images with laser scans to produce high-quality colonized and accurate three-dimensional computer models that are used in accident reconstruction and forensics settings.

AREAS OF EXPERTISE

- Vehicle Accident Reconstruction
- Vehicle/Pedestrian Accident Reconstruction
- Vehicle equipment, mechanical component failure
- EDR & HVEDR data imaging and analysis
- Computer reconstruction, simulations, photogrammetry, and video analysis
- 3DS-Max | Audition | After Effects | AutoCAD | AgiSoft | CloudCompare | FARO Scene | INPUT-ACE | MATLAB | PC-Crash 3D| Premiere Pro | RealityCapture | ReCap | PhotoModeler | iZotope

EDUCATION

May 1997 **Northern Illinois University** – DeKalb, IL
Bachelor of Science, Mechanical Engineering

May 1994 **College of Lake County** – Grayslake, IL
Associate of Science, Pre-Engineering

EMPLOYMENT HISTORY

Nov. 2021 - Present **JS Forensic Consulting, LLC** – Joliet, IL
Forensic Engineer & Accident Reconstructionist

Nov. 2020 - Dec 2021 **JS Forensic Consulting, LLC** – Carlsbad, CA
Research Engineer

Specializing in reconstructions and analysis of low and high-speed accidents involving automobiles, pedestrians, and other equipment and vehicles in all modes of collision, including small overlap impacts, rollovers, and underrides/overrides. Perform reconstructions, recreations, analysis including pedestrian, vehicle, and tractor-trailer accidents. Conducted audio and video analysis of surveillance and dash cameras used in a forensics settings. Conducted vehicle dynamics and performance, vehicle kinematics, occupant kinematics, advanced vehicle technologies, vehicle systems, audio, and video analysis of accidents.

- Mar 2010 - **Semke Forensic** – Orland Park, IL
 Oct 2020 **Senior Mechanical Engineer**
 Performed mechanical failure analysis with emphasis in vehicular accident reconstruction. Image capture and analysis of passenger vehicle Event Data Recorder. Digital mapping of accident scene with total station equipment, FARO Focus scanner, and Phantom 4 drone. Created 3D computer simulations of vehicle accident events with PC-Crash and 3DS Max software. Processed vehicle and accident scene digital mapping with AgiSoft photogrammetric software. Conducted dynamic vehicle testing to evaluate dynamic results.
- Jan 2009 - **Donan Engineering Co., Inc.** – Louisville, KY
 March 2010 **Senior Mechanical Engineer**
 Responsible for mechanical engineering related failures with emphasis in vehicular accident reconstruction. Mapped accident scene with total station equipment and conducted vehicle accident reconstruction analysis.
- Feb 2007 - **Rimkus Consulting Group** – Westmont, IL
 Dec 2008 **Senior Consultant**
 Provided vehicle accident reconstruction analysis, including the causes and countermeasures of vehicle accidents with the use of scientific methodologies and computer simulation software. Provided forensic mapping of vehicle accident sites, inspection of vehicles, analysis, and reporting of findings to clients. Evaluated the mechanical functions of commercial vehicles involved in vehicle accidents. Conducted downloads of passenger and commercial recorders for the purpose of vehicle accident reconstruction.
- Sep 2005 - **EFI Global** – San Antonio, TX
 Jan 2007 **Project Manager**
 Performed vehicle accident reconstruction analysis, which included full scale vehicle collision testing used for the purpose of vehicle accident reconstruction research. Responsibilities included analysis and preservation of evidence and producing technical reports. Conducted moisture intrusion and water damage evaluation of component failures used in residential plumbing applications.
- Jan 2003 - **Verifact Corporation** – San Antonio, TX
 Apr 2005 **Project Manager**
 Provided consulting services to legal clients pertaining to technical investigations in Vehicle Accident Reconstruction, mechanical failure analysis, product liability investigations, fire causation, component testing, safety analysis, and equipment design. Researched, designed, tested, and implemented a vehicle battery cut off system used in vehicle collision.
- Mar 2001 - **Sargent and Lundy** – Chicago, IL
 Nov 2002 **Pipe Stress Analyst Associate Project Manager**
 Conducted wind, thermal, and seismic simulations on piping used in the power industry. Responsibilities included on-scene investigations, analysis, and production of technical reports for piping support loads, forces, and stresses generated by computer simulations.
- Nov 2000 - **Stilson Consulting** – Grayslake, IL
 Sep 1998 **Project Manager**
 Provided consulting services to legal clients pertaining to technical investigations in Vehicle Accident Reconstruction, mechanical failure analysis, product liability investigations, component testing, safety analysis, and equipment design. Researched, designed, tested, and implemented a vehicle battery cut off system used in vehicle collision.



PUBLICATIONS AND PRESENTATIONS

- Vega, H., Suway, J., and Engleman, K., "A Novel Method for Using RealityCapture in a Forensic Setting," SAE Technical Paper 2022-01-0820, 2022. doi: 10.4271/2022-01-0820

CONTINUING EDUCATION

- Traffic Accident Reconstruction I. 2004.
- Vetronix Crash Data Retrieval (CDR) System Certified Technician. 2004.
- ARC-CS Crash Conference. 2006.
- Electrical Arson Fire Investigation. 2006.
- Traffic Accident Reconstruction II. 2007
- Heavy Vehicle Crash Reconstruction. 2007.
- Hazardous Waste Operations and Emergency Response Certification, Level D. 2008
- Bendix Air Brake Product School Training. 2008.
- HVE Training. 2008.
- WI IAAI Basic Fire Investigating. 2009.
- Bosch Crash Data Retrieval (CDR) System Certified Analyst. 2009.
- PC-Crash Simulation Training. 2010.
- PhotoModeler Training. 2010.
- Bosch Crash Data Retrieval (CDR) System Certified Analyst. 2011.
- Investigation of Gas and Electric Appliance Fires. 2011.
- IL IAAI Fire Investigator Seminar. 2012.
- Finite Element Analysis. 2012.
- Vibration Modal Analysis. 2012.
- Piping Engineering. 2012.
- Horizontal Curve Safety. 2012.
- Forensic Engineering-Metallic Material Failures. 2012.
- IATAI Human Factor for Traffic Accident Reconstruction. 2012.
- IATAI Annual Conference. 2012.
- IL IAAI Fire Investigator Seminar. 2013.
- Heavy Vehicle EDR. 2013.
- PC-Crash 9.2 Rollover/Validations. 2013.
- IL IAAI- Vehicle Fire Seminar. 2014.
- PC-Crash 9.2 Collision Theory. 2014.
- Truck Fires. 2014.
- Liquefied Natural Gas Fundamentals. 2014.
- Residential Propane Gas Explosion Case Study. 2014.
- Anatomy of Waste Water Tank Explosion. 2014.
- Root Cause. 2014.
- Forensic Analysis of Stair Decent Falls. 2014.
- Failure Appraisement. 2014.
- Marine Accident Reconstruction. 2014.
- Explosion and Chemical Accident Investigations. 2014.
- Fundamentals of Digital Images and Video Processing with MatLab. 2015.
- Motor Vehicle Accident Reconstruction - Tire, Brake, and Steering Failures. 2015.
- Human Factors in Forensic Analysis of Accidents. 2015.
- FARO Scanning. 2016.
- Advanced Crash Reconstruction Utilizing Human Factors Research. 2017.
- 3DS Max and MaxScript. 2018.
- Pedestrian Collision Investigation. 2018.
- iINPUT-ACE Reverse Projection. 2019.



- HVE Training. 2020.
- PC-Crash Tips and Tricks. 2020.
- PC-Crash EDR Data. 2020.
- PC-Crash Video Data 2020.
- LightPoint Scientific - Enhanced Analysis of Point Cloud Data. 2021.
- Advanced Troubleshooting & Vehicle Systems for CDR/EDR Operator Technician. 2021.
- Forensic Analysis and Enhancement of Digital Audio. 2022.
- Advanced Forensic Audio Enhancement and Processing. 2022

